

Hardware and Software Requirements

The following table lists the supported hardware and software components for using the Web-based MAP system.

Note: In most cases, the requirements are the same for both the MAP Administration and Reporting Center (MARC) and the MAP Student Testing Center (MSTC) environments. Any differences are identified.

Category	PC Requirements	Macintosh® Requirements
Computer hardware		
Screen resolution	1024 x 768 minimum	1024 x 768 minimum
Color depth	16-bit (32-bit recommended)	16-bit (32-bit recommended)
Peripherals	Keyboard and mouse MSTC only: Headphones or speakers required for MAP for Primary Grades testing	Keyboard and mouse MSTC only: Headphones or speakers required for MAP for Primary Grades testing
Operating systems and software		
Operating system	Microsoft® Windows XP® with Service Pack 3 or Microsoft Windows Vista® or Microsoft Windows® 7	Mac OS® X v10.4, v10.5, or v10.6
Browser for MARC*	Internet Explorer® 7, 8, or 9† or Firefox® 3.5 or 3.6	Safari® 3.1, 3.2, 4, or 5 or Firefox 3.5 or 3.6
Browser for MSTC	Internet Explorer 7, 8, or 9†, with the MAP lockdown browser‡ for PC	Safari 3.1, 3.2, 4 or 5, with the MAP lockdown browser‡ for Mac®
Multi-media player	Adobe® Flash® Player 10.2 or higher	Adobe Flash Player 10.2 or higher (10.1 for PowerPC® processors#)
Reports viewer for MARC	PDF viewer capable of displaying files created in Adobe Acrobat® 9	PDF viewer capable of displaying files created in Adobe Acrobat 9

*MARC requires specific browser settings, such as cookies and pop-ups allowed for the MAP URL.

†Internet Explorer 9 is supported only with Compatibility View enabled.

‡The MAP standard configuration requires a lockdown browser for all testing. A lockdown browser reduces distractions to students during testing by restricting access to other applications and Web sites.

#Due to incompatibilities in hardware and software from third-party vendors, NWEA plans to support PowerPC processors only until July 2012.

Bandwidth Availability

The key bandwidth requirement is available Internet bandwidth sufficient for adequate system performance during student testing.

The most important bandwidth considerations are:

- Number of computers available for concurrent tests
- Number of students taking MAP for Primary Grades (MPG) tests during the scheduled test window
Note: MPG tests require the most bandwidth.
- Bandwidth available through your main Internet connection
- Bandwidth available through any limitation points in your internal network (such as school-to-district connections when the district has the main Internet connection)

The following table shows the approximate bandwidth required for various numbers of concurrent testers.

Students Testing Concurrently	Average Available Bandwidth Required*	
	MAP Tests	MPG Tests†
50	0.25 Mbps	1.1 Mbps
100	0.5 Mbps	2.2 Mbps
250	1.25 Mbps	5.5 Mbps
500	2.5 Mbps	11 Mbps
1000	5.0 Mbps	22 Mbps

*The table identifies the average bandwidth required to provide adequate performance and avoid system time-outs during the question-and-answer portion of student tests.

†MPG tests require more bandwidth because they include audio support and additional interactive features for young students. Since the grades taking MPG versus MAP tests may vary from term to term, the bandwidth requirements may likewise vary.

Additional bandwidth is needed at the beginning of each test to load the initial test questions and the question display software into cache in each computer's browser. The initial load is approximately 2.2 MB, which is about 0.15 Mbps per student when spread over 2 minutes. The load time will vary based on available bandwidth, but no system time-outs will occur if less bandwidth is available.

To perform an Internet speed test, use a Web site such as www.speedtest.net and select Miami, Florida as the location. Perform the test at different times throughout the school day to understand the variations in bandwidth availability based on staff and student usage. Record the download speeds and use them to approximate your available bandwidth during testing.

The bandwidth requirements listed in this section are subject to change. In addition, the bandwidth you need may vary from one term to the next, and from year to year, based on your testing plans.